DOCUMENT RESUME

ED 184 067 CS 005 306

AUTHOR Goodman, Yetta M.
TITLE The Roots of Literacy.
PUB DATE Jan 80
NOTE 43p.; Paper presented at the Annual Meeting of the Claremont Reading Conference (47th, Claremont, CA, January 18-19, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Cultural Context; *Developmental Stages; *Early Childhood Education; Educational Philosophy; *Educational Research; Educational Theories; *Language Acquisition; Language Enrichment; *Language Skills; *Literacy; Oral Language; Reading Skills; Writing Skills
IDENTIFIERS Metacognition

ABSTRACT

This review of research with children aged two to six on their reading, writing, and oral language development speaks of five roots of a tree of literate life that require nourishment in the soil of a written language environment. The roots discussed are the development of print awareness in situational contexts, the development of print awareness in connected discourse, the development of the functions and forms of writing, the use of oral language to talk about written language, and metacognitive and metalinguistic awareness about written language. Examples of children's responses are used to support the concepts presented. Conclusions call for the need to be aware of the social, cultural, and economic forces that influence the development of literacy, to stop preparing children to read but rather to expand on their immersion in all kinds of reading and writing activities, and to recognize that literacy develops naturally in all children in a highly literate society. (AEA)

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THE ROOTS OF LITERACY

Yetta M. Goodman

The environment of three and four year olds in many places in the world is filled with the settings, signs and implements of a print oriented society. In Tokyo, the atmosphere is not only filled with the sounds and presences of millions of people moving from one place to another in their busy day, but the senses are bombarded with signs announcing banks, buildings and stores in three Japanese symbol systems and English. Street signs in Tel Aviv announce themselves on large white rectangles in Roman, Arabic and Hebrew alphabets. A small boy who could be no more than five in Cuernavaca is lying on his back next to his mother as she sells her beads and wares to tourists. He is reading a small Spanish comic book while his brother, about a year older, is selling newspapers shouting out headlines to capture the attention of potential buyers. A three year old Papago child is sitting on a small chair next to her mother at a teacher aide meeting in Sells, Arizona. She looks around and sees another chair the same size as hers, drags it over, and sets it carefully facing her chair. She then walks over to a table, takes a pencil and paper to her chair, sits down, places her paper on her self-constructed chair-desk, and begins to "scribble" with her pencil.

These vignettes are features of a literate society. A society in which literacy plays such a strong role that many young children, years prior to the introduction of formal instruction in written language, are beginning to discover how print is organized and how it is used by the

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members of their society. They begin to act on the literate forms in their environment in the same manner in which they act on the rest of their environment. In responding to, interacting with, and organizing the written language in their daily world, they begin to understand:

1) the significance of written language;
2) the oral labels used when referring to written language;
3) the purposes written language serves for people of different socio-economic status; and
4) the variety of forms used to construct the meanings communicated by written language.

It is in these interactions between the learner and his or her world that we must look for the origins of literacy.

In 1965, I began to study first graders to discover the beginnings of reading. Among the six children I studied, three had failed reading readiness tests. Yet even these children were beyond beginning reading. They were doing things and had developed concepts that were part of the reading process of mature, proficient readers. They were aware of the alphabetic nature of print. They knew that written language had a relationship to oral language. They could handle books and follow print in a left to right direction. They were predicting, confirming, and comprehending using graphophonic, syntactic, and semantic cueing systems with varying degrees of proficiency.

My major questions were:
1) How do children develop these concepts?
2) When do children actually begin learning to read?
3) What is the impact of home, community, and environment on learning to read?

At the same time I was considering these questions, developing knowledge from related fields of study helped me organize my thinking about

reading development (1, 2, 3, 4, 5, and others).

Researchers in oral language development provided insight into the large amount of language learning which goes on in young children from birth to school entrance. Children learn to speak and listen and develop the rules for oral language use without the benefit of formal instruction (6).

Read (7) and others were exploring the children's development of phonological rules by examining children's spontaneous writing. Again I was able to substantiate a basic principle of language development; that young children prior to instruction are in control of their own learning since conclusions from Read's research suggested strongly that pre-schoolers categorize speech sounds and invent their own spelling.

As early as the 1930's, research has provided supportive evidence that to understand literacy development, one must look to very young children prior to school entrance involved in reading and writing tasks. This research provides evidence that young children are actively involved in self-learning in the area of written language -- both reading and writing.

It was not enough to look at reading alone. Written language has receptive and productive processes. Both have to be investigated to understand how written language develops. New questions were added to my three original questions. I broadened my concerns about reading to not just writing but to the development of literacy in young children.

The ideas I present are tentative answers to my questions influenced by the work of significant scholars in the field of language development including literacy development (See references). Most

important, these views have been developed and modified by my own naturalistic research with children in response to reading and writing situations and personal interviews. These children are two to six years of age and represent wide ranges of socio-economic backgrounds. As I describe my views, I will verify them with examples from the research. I am representing the beginnings of literacy with a metaphor -- the roots of a tree which will eventually become the tree of literate life.

In order to understand reading and writing, we have to be concerned with at least five roots of literacy development. Before examining the roots, however, I wish to suggest that just as a tree is influenced by the soil in which its roots grow, the maturing roots of literacy in the young child respond to the variety of nutrients in their soil -- the written language environment.

Language development is natural whether written or oral. It develops in a social setting because of the human need to communicate and interact with the significant others in the culture. It develops in response to the creative, active participation of the individual trying to understand and make sense out of the world in which he or she is growing. Language is functional because it has immediate and significant bearing on the life of the developing human organism.

It is, therefore, impossible to consider literacy development without understanding the significance of literacy in the culture — in both the larger society in which a particular culture grows and develops and within the specific culture in which the child is nourished (8, 9). In a print oriented society, every child's literacy is fed by the nutrients of the environment in which he or she grows. I won't focus on

the nutrients in this paper but in order to explain the development of the roots themselves, we must keep in mind that all the child's personal experiences: 1) the degree of literacy in the environment; 2) the oral language of the child; 3) the attitudes about written language expressed through oral language by adults; 4) the values expressed about language by various significant others toward literacy; 5) the child's degree of awareness of how symbols can be represented in art, music and dance -- all these experiences and no doubt many more nourish the roots of literacy.

I will name the roots first, then explore each in depth. The five roots include:

1) Development of Print Awareness in Situational Contexts.
2) Development of Print Awareness in Connected Discourse.
3) Development of the Functions and Forms of Writing.
4) The Use of Oral Language to Talk About Written Language.
5) Metacognitive and Metalinguistic Awareness About Written Language.

As I explore each root, keep in mind that the others are growing and developing simultaneously to various degrees depending on the nutrients in the soil in which the tree of literacy is planted. At the same time that each of them is developing simultaneously, all of them are continuously interacting and influencing each other.

Root I - Development of Print Awareness in Situational Contexts

This is the root of literacy I believe is most common to all learners and the most well developed in the preschool years.

Description of the Social Setting,
the Function and Linguistic Components - Root I

The environment in which the young child is interacting and

continuously organizing and analyzing includes all the embedding of print in different kinds of settings. The child develops a model, a world view, rules about the features of written language in situational contexts. In other words, the child is developing a schema about these phenomena.

These young beginning readers are an integral part of the daily transactions which occur among themselves, adults, and print. Many of the daily personal items the child and other significant persons in their surroundings pick up or touch deal with print. Adults or older children will often react to the print in some verbal way as they use or react to the item. The preschoolers either see the adults or are themselves involved in reading signs and maps; looking for a particular kind of gasoline station, getting coke from one type of dispenser or potato chips from another. As children are pushed in their strollers down a street past stores or in a shopping cart through the aisles of well-advertised edibles and non-food items, they observe parents and older siblings making choices based on various criteria often involved in communication with the print. Even the decisions about which store to enter may involve knowing if they give certain stamps, take certain stamps, or have particular specials on certain days. In the streets of even a small town in an industrialized society, the young beginner deals with names of stores, restaurants, street signs, highway markers, and other printed matter which advertise or tell the names of places or control the behavior of people.

Preschoolers are not passive bystanders. They are fitting all these experiences into what they are learning about the world. They ask

themselves questions about the world of print in which they live. "What does it do? How can I use it? What does it say? Can I use print to tell others?"

Children often see others looking in TV Guides to make choices about TV viewing. Very young children often play in front of the TV intent on their favorite toys. But as commercials come on or programs change, the change of color, movement, and sound catch their attention and they watch the print on television and wonder what it is all about. The hucksters of advertising on TV are out to hook children at a young age. "Count Chocula" sounds like an intriguing item thinks the toddler and she pulls it off the shelf the next time she is at the market with her mother and throws it into the basket. At the breakfast table, there is talk about "Count Chocula" and the preschooler finds ways to tell it apart from oatmeal and cornflakes.

In talking about the items which the labels represent or name, adults can use a variety of names to represent the graphic print. Generic terms are often used regardless of the specific label. Children are more likely to hear, "Get the cereal and fix it for breakfast," than "Take Kellogg's Special K." Sometimes a specific term has become generic in a home so that Chiffon and Scott tissues may both be called Kleenex by all members of the family when they are talking about them, buying them or using them. All of these interactions occur in the presence of an active preschooler absorbing knowledge like a sponge. So it is not surprising that to the child CREST and AIM may be called either tooth-paste or Colgate depending on whether the child views them as generic or specific, based on the background and experience in the home environment.

so the child developing written language relies on the many cues to comprehend. Lois Bloom says about context and oral language, "Children talk about events that are immediately, perceptually available in the nonlinguistic context...It appears that child utterances depend directly on the support of nonlinguistic context whereas adult utterances do not" (10). Our research suggests that the same is true of written language.

Directionality is another linguistic principle which begins to develop. Since environmentally embedded print in English is usually presented horizontally, children at a very early age are aware that print takes a horizontal form. However, there are times when environmental print is vertical and the children must make room for this in their developing schema of directionality. Print in environmental settings does not always stand still. There are times when it is movable and the letters, words, and whole logo can be seen from many vantage points as it twirls around and blinks on and off. The print may not always begin at the left margin of the object on which it occurs. Aesthetics is an important part of some of the print displayed in the environment and spacing becomes a significant feature. The shape and size of an item will influence and constrain the directionality of print.

Forms and groupings of letters and words are aspects of the print and the principle that language comes in units becomes significant in development. Children begin to gain some insight into the length of the printed item and the oral response. They use voice pointing in various ways to indicate that there is a relationship to length of print and oral language. One child might show evidence of this by

The functions of print in the environment are many. The most important function that it serves is communication. The print surrounding the young child can label and name games, buildings, stores, restaurants, TV programs, streets, cities, food items, and household items. These same labels in the exact same shape and size can be embedded in different settings and serve the function of advertising. The McDonald's logo can occur on television as an advertisement or it can be seen announcing the eating place as the family drives by on the way to grandma's house. Other kinds of print serves the function of controlling and regulating the behavior of others through signs which warn and advise -- STOP, NO PARKING, KEEP OFF THE GRASS, STAY OFF THE VERGES, SQUEEZE RIGHT, 55 MILES AN HOUR.

The form of print takes varying shapes and sizes and is embedded in different ways in the environmental setting. This provides linguistic information for the child to organize. The characteristics of graphic units include distinctive shapes, colors and sizes. They usually occur in predictable places -- on a street corner, high above other structures, on a particular structure, on a carton or bag accompanied by the same pictures every time they occur.

There is no question that there are many cueing systems which support and constrain the embedded print. Color, size, shape, and pictoral cues,each is a system of its own but to the child developing print awareness, a key discovery is that it is the print that communicates the message. When asked how he knows that a particular boxed toy says LEGO, a little boys points to the print. Just as a child developing oral language uses all the cues in the situational context to communicate,

saying "Co-Co-Co-Co" pointing to each segment of the scripted form of Coca Cola. Another child runs her finger under Kellogg's Raisin Bran on three different lines of the carton and holds on to her oral rendition of "Ce---reeeee---alll" so that her finger and voice stop at the same time.

Signs that control occur in different places than signs that label or advertise. This may provide an additional cueing system since children early in their development usually respond to controlling signs with imperative statements and to the other types of signs with naming statements. Shown the traditional school crossing sign or even the word SCHOOL without the picture but with the appropriate yellow background with black capital outline letters, Michael aged 3½ replied, "Watch out for kids."

Type style varies. Logos like Coca Cola are most often in a particular script and many signs use small case even for the first letter. However, the most common display includes capital letters, boldy presented, flickering from TV sets and neon signs and dominating the world of signs and logos in the environment.

In this highly social, complex and busy literate environment, the young preschooler becomes print aware.

Development - Root I

I believe that the beginnings of reading development often go unnoticed in the young child. Neither children nor their parents are aware that reading has begun. This lack of sensitivity occurs because the reading process is misunderstood; because learning to read and being taught to read have been conceived as a one-to-one correspondence; and because we have been led to believe that the most common sense notion

about learning to read suggests that it begins in a formalized school environment.

Reading is a receptive process. Like listening it cannot be observed directly but can only be inferred from other behaviors. Therefore, the very beginnings of reading, like listening, are not readily observable. It is not until the child responds to oral language very deliberately and overtly that people know the child has listened (and understood). Beginning reading like beginning listening takes place in a familiar predictable setting for the child. Since this setting includes color, shape, body movement, and familiar oral language, adults assume that the child is not reading print but decoding from the other contextual cues. I don't deny that the beginning reader uses all the cueing systems available to decode written language. I wish only to argue that the child is also using the print as a cueing system. Just as oral language reception or listening takes place in a familiar context in which all cueing systems available are used by the child to decode oral language. It is in an environment with many cueing systems available to support hearing that the child learns oral language and in such an environment including print that the child learns to read and write as well.

If we don't recognize these beginnings, we cannot help the child know about the strengths he or she is using in becoming literate.

My research indicates that children develop the ability to read the print embedded in environment in the following ways:

1. The young child begins to read when printed symbols embedded in situational context are decoded to meaning. A 15 month old child

says, "D-D, D-D" jumping up and down in his car seat every time Dunkin Donuts is passed. Or a 2 year old says, "Get Fruit Loops," takes the appropriate box off the shelf and points to the print on the package when asked "Where does it say Fruit Loops?" For many children in this highly literate society, this behavior develops between the ages of two and four.

2. The child is aware that print does the telling. By the time children are four, most will point to print when asked "Where does it say 'milk' or 'stop'?" Children at this age will point to print they are interested in and asks "What does this say?" They often can recognize their own name regardless of the context. When Mark was as young as four, he looked at the word TIMEX, pointed to the M and said, "That's my word."

3. As three and four year olds become aware that print does the telling, they react to print ideographically. The whole linguistic unit has a meaning and represents the item directly. A child will point to his own name and spell J-I-M-M-Y. When asked what that is, the child may respond, "That's me." All brands of cereal will be called cereal at this point -- the specific name may not be used. I-V-O-R-Y is soap and S-T-O-P is a stop sign. As they move into the four and five year old range, two principles interact which make children seem less sure about their responses: a) They become aware that "cereal" is not a sufficient response and that a specific name is more appropriate. This will cause a slower response than the three year old might make or even an "I don't know" response; b) The alphabetic principle begins so that the child might respond as Shana did to a cut out CREST logo. "That's toothpaste,

wait it's Aim, no, Colgate! Colgate!"

When awareness of the alphabetic principle occurs in the situational context of real written language embedded in a real setting, the child will focus first on meaning and then attend to letters. However, if letters, sounds, and words are presented apart from functional language, children will treat these isolated units as unrelated to the act of gaining meaning from context. But more about this later.

4. Children's responses to print even at very young ages tend to be appropriate. When they believe they know an item, they respond confidently. Children also seem to know when they do not know. Their "I don't know" responses are usually appropriate to the situation. When pushed or probed with too many tasks which are unfamiliar, they begin to change their behavior drastically. A child who can sit and interact with a researcher for up to 45 minutes responding to familiar items and print will quickly become evasive, restless, playful and hostile if too much of the task becomes unknown or unfamiliar to the child.

5. Children from three to five are tentative and suggestible. They point to M-I-L-K when asked "Where does it say milk?" When asked "Does it say milk anywhere else?", they may point to all the print on the carton. Or if they say "no" originally in response to that question and the researcher points to Carnation or some other brand name and asks, "Does that say milk?", the child may hesitate a bit and then answer "yes". Children are still sorting out all the meanings in the environment. They are trying to understand how to answer questions, to respond to strangers who are asking unusual questions, trying to figure out why anyone would ask such questions and respond to print all at the same time.

6. Directionality begins very early. As soon as the child points to print as the agent of communication, his or her finger will most likely move horizontally across the page. It is important to remember that the directionality of print in situational context is more varied than in a connected text. Children will move their fingers from left to right as well as from right to left, but in no cases have we had any children move their fingers from top to bottom. We can predict what Chinese and Japanese speaking children do.

7. When children respond to print in context, they tend to relate items conceptually even as young as two. Pepsi and Coke may be substituted for each other; stop may be said for a school crossing sign; Rice Krispies may be substituted for Sugar Frosted Flakes but almost never is Coca Cola called Tuna, Lego or Johnson's Baby Powder. Children are categorizing and organizing so that their substitutions can almost always be explained in a logical way.

Root II. Development of Print Awareness in Connected Discourse

Description of the Social Setting, the Function and Linguistic Components - Root II

There are many kinds of written language in connected discourse that are not situationally embedded with which preschool children interact in their environment. A significant other human must bring these materials into the environment and experience of the child. A particular child's experience is, therefore, probably more idiosyncratic than situationally embedded print which is more universally a part of all children's environments. In some homes, books are readily available and adults and siblings can be seen reading silently, reading aloud to each

other, talking about events from books. Winnie the Pooh, Peanuts or the Borrowers can become part of the creative play in the home. "Speaking of the butter for the royal slice of bread," says a five year old to her mother. It's part of their family lore and a neat way to ask for the butter.

In other homes, the daily newspaper may be scanned hurriedly and a popular monthly magazine may be read silently but there is little oral interaction with others in relation to the reading. In still other homes, a religious work may occupy a special place on the mantel and may be read aloud daily prior to the evening meal with the whole family assembled.

Some homes may receive mail which is shared, while in others mail may be opened and read when children are not around to annoy or disturb. Reading may take place silently, orally, individually, or in groups. A child may sit in a lap and have a very personal experience with the adult and the book being read. Or the child may sit in a care-taking setting among 20 or 30 other preschoolers, listening intently and watching as the teacher holds the book in various ways to share the illustrations with the children.

For each kind of material, which includes print in connected discourse, there is probably more than one function. Books may be fun and filled with stories or they may be read, occasionally, out loud by someone in a stern manner and the material being read may be uncomprehensible to the child. Early the child learns whether the connected discourse in all books or only some particular, special books has significant relationships to his or her daily life's experiences.

Newspapers may be used to "buy things" or "to turn to channel 4."

At age three, some children may examine each page of a story as an independent entity. They may talk about each page as if it were unrelated to the one that came before or to the next page. At four and five, many children can open books in the appropriate direction and know that the story moves along from page to page even though they are still unaware of the function of print in books. As they have greater experience with written language materials, children begin to know that print is the communication device in connected discourse as it is in situationally embedded print; that the written language moves from left to right across the page and back to the left again moving from top to bottom.

Children can begin to read without being fully aware of word boundaries, punctuation or the concepts represented by the terms letter, word or number. Their responses show evidence that they know about the macro-structure or overall organization of what they are reading and can predict how stories will start and how letters begin with Dear Somebody and end with Love Jennifer.

Development - Root II

In relationship to connected discourse, young children develop the ability to handle the form of the material in which the connected discourse is organized -- such as books, newspapers, letters, magazines, notes, etc. Although our research has involved children in response to a number of these items, we have done the most with book handling knowledge. Therefore, I will focus on this as we turn to the developmental sequence of this root. Each form of connected discourse may develop

differently depending on the experiences the child has with the particular form.

Book handling knowledge develops as the young child learns to open the book in the appropriate direction, knows that the front pages and the title page are not significant features and turns to the first page of the story when asked, "Tell me where to start reading." Early in the development of book handling, the child may indicate that the pictures are providing the language information when asked, "Where am I reading?" By the time children are five or six, most show evidence that they are aware that the print is what does the telling and point to the print when asked, "Where am I reading?"

There is no automatic or simple relationship between being print aware in terms of print embedded in situational context and being aware of the function of print in books and magazine.

In each specific print experience, the receiver must make decisions about what is significant or not. Even when adults open a book, there is a great deal of print to which they do not attend. It is common for readers to skip five or more pages of print before they come to the page where they start reading. Children must learn this. Some children even as young as three provide evidence that they are aware that some of the early pages of a book are insignificant. For many children this occurs by five.

Developmentally, the child becomes more confident about where the story begins and that it is indeed the print that does the telling. I believe that this generally happens earlier and more with children who are read to in an intimate one-to-one or small group setting. Children who are in nursery schools and are read to in large groups without intimate

story reading interactions are more likely to believe that the pictures are the significant features of storytelling.

Even two and three year olds show evidence that they are becoming aware of book handling. When asked to "show me how you read" one very young two year old opened a book to the middle and moved her head from side to side looking at the pages but not moving her lips. This child is growing up in a home with academic adults who do a great deal of silent reading. Another child when asked the same question opened up her picture story book, held it upright and turned it so that the researcher could see it. She began to tell a story holding the book facing the researcher and turning the pages every so often. It was obvious she was reading a book just like a teacher might to a group. Both these children are at the beginning stages of developing book handling knowledge. Like they do with so many of the activities of older members of their culture and society, they are role playing the experiences they eventually hope to participate in. But this "play" provides them with the opportunities to try out or experiment with a variety of forms before they will actually put the process all together and gain mature control. This not remote readiness exercise is the beginning of reading in young children.

Once children become aware that print does the telling, they begin to develop insights into the conventions of print in books. This seems to go from whole to part. Marie Clay's Sand Test and an adaptation of the Sand Test procedures that I have developed called Book Handling Knowledge provide insights into this process. Responses to the tasks on either of these instruments indicate that children seem to develop on their own

concepts foundational to reading: not only do children show that print goes from left to right and from the top of the page to the bottom, but eventually children develop the ability to follow along as the adult is reading. First, they follow along until they hear the sentence is almost over and finally they can point to the word as it is being read.

As the child begins to handle books, oral reading becomes part of the experience as well. At two or three, a child might well say, "I can't read" when asked to read a book. However, as children get older different responses occur.

Some children will respond to the book depending on what kind of book it is. If cues suggest the book is fiction he or she will begin to read by saying "Once upon a time." Sometimes the child's response depends on the question asked by the researcher. When asked, "Tell me about this," the child may point to each page and each picture and respond by describing or labeling. When asked, "Read me a story" or "Use the book to tell a story," the child more often will use a story-telling discourse. Eventually, between the ages of four to six, the children begin to use the print itself to read with. If provided with the opportunities, they will read with adults, predicting words or phrases appropriately. If the story is well known, some children can provide a wholistic remembering of the story. They develop an awareness of the integrated quality of storyness but are not fully able to use the print continuously. At certain moments in time, the print may take on significance but children will use the print selectively perhaps at the beginning of each page or to remember certain names within the story. A lot more work has to be done to gain greater insight into

wholistic remembering.

I believe that wholistic remembering is a significant stage of reading development and not simply memorization. It provides evidence that children know the essence of storyness. They know stories have a beginning, middle and end while their focus is on the reconstruction of meaning. Even when the child has begun to read making greater use of the graphophonic system, there are moments when the child concerned with story quality will complete predictions that make sense rather than waste the time to go slowly to get the word or to sound out or remember. Like other aspects of language, the more familiar the child is with the book, the story, the ideas, the more confident and appropriate the child's response to the book will be. Personal background and experience are always significant elements. So it shouldn't surprise us that little Melanie, whose parents read the bible at home every night, asked her father, "Can I read the bible tonight?" Dad replied, "When I finish my turn, you can have your turn." When she received the bible, Melanie wet her two fingers between her lips, squeezed the thin page of the bible, turn it, and looking closely at the page read, "Joseph, three-sixteen....He walketh the way..."

Root III. Development of the Functions and Forms of Writing

Description of the Social Setting, the Function and Linguistic Components - Root III

Since most of my own research has focussed on reading, I have treated writing as a single root, knowing that this aspect of the representational scheme of literacy development is oversimplified. I believe that the production of written language is as significant to literacy

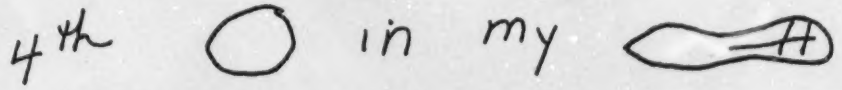
development as is its reception.

We need a great deal of research to provide the necessary insights concerning what impact reading has on writing or that writing has on reading. Although there are some who have suggested that writing may precede reading, (11) the insights I've developed regarding literacy development suggest that reading precedes writing. However, for some children the writing of stories, notes or letters begins soon after the child is aware that written language communicates receptively.

Writing in homes, communities, and pre-schools may even be more idiosyncratic than reading connected discourse. Although in most homes reading occurs in some way every day, there are some homes in which a pencil or pen may be hard to find. But even in homes where there is very little letter, story or paper writing, someone at least occasionally takes a message, makes a shopping list or fills out some forms. Most children, therefore, see writing occur in many different places and through many interactions. Reports are written at tables or desks and these often occur in a particular room in the house. Shopping lists are written in the kitchen in a special listing format and placed in a pocket or a purse. At restaurants, stores and offices, children see waiters taking orders and clerks writing. The people they are with sometimes read the writing and then write something in response.

For children, the functions of written language are narrower than the function writing serves for adults. Since Hildreth's studies about how children write their names (12), it has been obvious that many children write their own name to represent themselves, to label their possessions, drawings or dictations or to sign a letter or card for

a family member or friend as early as three years of age. Some children write a note to themselves like Susie did at age 4, a reminder to put the silver tongue of her shoe buckle in the fourth hole in her sandal so her sandal wouldn't be too loose or too tight.



Reiss, age 4, wrote a note to his mother so she would know that "I'm going to be outside." IMGOEGTOO BAWTSID

Mother's days cards to grandma or thank you notes for presents may be written as Rebecca did at age 4. DEAR KEN AND YETTA, THANK YOU FOR THE NICE BOOK

Children may make lists of things for Santa to get them for Christmas (Baby Alive, Dump truck) or to buy in the store (cookie, syrup).

BABELIV | COCE
DOPTUK | SRP

They may write stories or songs. Jerome age 4 wrote a story about LANRD. It was 7 pages long. He numbered each page, wrote about Leonard's trip in his timmyshyn and the last page was appropriately labeled AND.

As in other aspects of language development, children are concerned with learning to mean. In addition, they may play with the same form over and over again because it serves a purpose for them -- enjoying the accomplishment of a task. Early writing often looks like scribbling

to adults but as we ask the child about the writing, we often find that it expresses some meaning. Other children, however, after they have written something that seems to be pre-communicative (scribbling) when asked by an adult "Read that to me" will respond "You know I can't read." As children write their names, they seem to become aware of the distinctiveness of letter forms. When Lynn, 2½, was asked to write her name by her mother, she produced the following. The lines are what she wrote, the items in parentheses are what she said as she made each stroke. / (L) / (Y) / (N) / (N). There are many down strokes in Lynn's name. She had been spelling her name aloud for some time. Using the one-to-one correspondence, she showed beginning development of the form of written language.

Many productions of early pre-communicative writing seem to look more like cursive writing while writing that occurs at four or five is often in print form. Perhaps early scribbling is a way for children to role play the cursive writing style of adults. Children who live in environments where the writing system is not English seem to have a scribble which looks different from the way the English writing child scribbles. Once children begin to produce alphabetic writing, the form that written language takes is reflected in the purpose of the child's productions. Lists will be written differently from stories or notes. Envelopes may be scribbled on in the center. As children write connected discourse, they begin to use appropriate syntactic form experimenting with spacing and punctuation. The child's phonological system is often represented in invented spellings; such spellings provide evidence that they are using articulatory features of language as well as their intuitive

knowledge of the phonological systems.

Development - Root III

Each of the following components of writing shows developmental sequence.

1. Scribbling to alphabetic writing. The child moves from pre-communicative script (scribbling) to representing meaning alphabetically using capital letters initially for all letters except the i. An interesting aspect of this is the response of readers to the child's development. The pre-communicative stage can be read only by the child. As children move toward alphabetic orthography, their early attempts may only be decoded by themselves. Soon a devoted parent or knowledgeable and willing teacher is able to read the children's writing and finally the children's inventions are understood by wider and wider groups of people. This again shows a parallel to the way infants' oral language is understood by others as oral language develops from ages one to three. Initially as children begin to write, a word, syllable or oral sequence may be represented by a single letter. Letters are strung together without spacing and punctuation. All these aspects move slowly and unevenly toward adult convention but early attempts indicate children's experimentation with language form. Spacing may occur for some words but not for all. The concept of over-generalization is also a part of this development. Periods may initially separate children's representations of words before they use periods for sentence markers only. Apostrophes may initially occur prior to the s in all words that end in s before the child becomes more selective and conventional in using apostrophes. Once children move from writing with capital letters

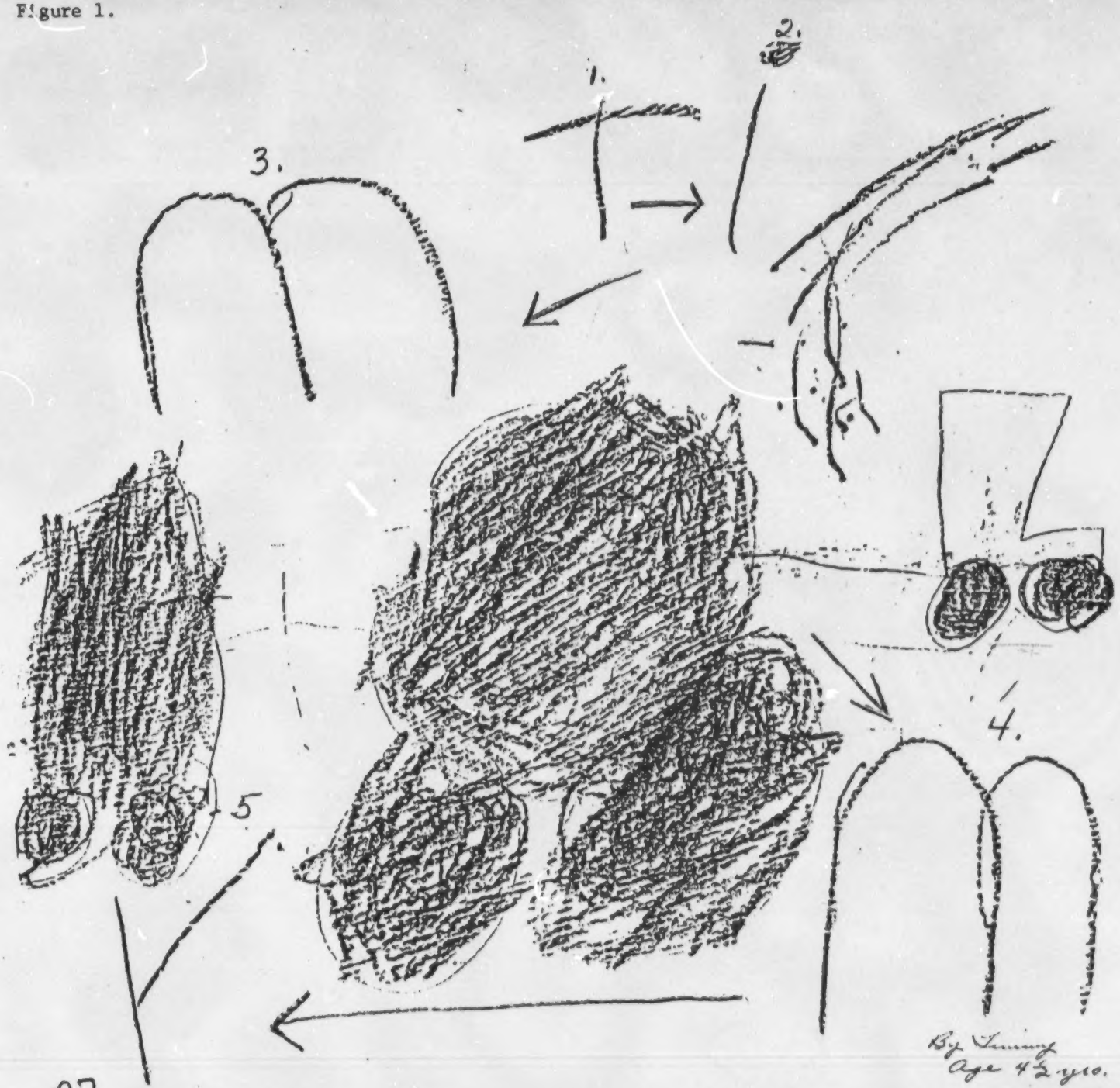
almost exclusively, they seem to use capital letters selectively for nouns, other important words or for the first letter in every line. Use of capitalization in initial writing gives way to more conventional manuscript or cursive writing depending on the environmental setting and the value placed on each by the home or school.

2. Directionality is not always from left to right. Children write depending on where their pencil lands and then write to fill up the space using logic rather than arbitrary form. Timmy age 4½ drew his picture first. He then decided to write his name. He happened to put his T in the middle of the paper and then moved to the right to write his i. He had no place to go so then he put his m in an empty space to his left. He moved again to his right but down to the bottom of the page to write the second m and finished to ...s left because that was the only room that was left. Unless the researcher or teacher is watching at the moment of production, it is possible to believe that Timmy does not know the order of the letters in his name or the direction that he is writing.

- - - Insert Figure 1 - - -

3. In spelling development it seems that, in most cases, consonants are used appropriately earlier than vowels except for the preconsonantal nasal. The m and n in words like want and jump are often omitted in children's spelling inventions. Sometimes children use only consonants in their first writings except for initial vowels. The long vowel is then introduced in medial vowel positions and finally the short vowels except for the schwa which may not develop for some children until they are in third and fourth grade. Children's spelling develops

Figure 1.



By Jenny
Age 4½ yrs.

toward conventional spelling over time but even in the writing of the same story or note, the young author can show spelling development. Jerome who wrote the story about LANRD showed his experimentation in that story. On pages 1 and 2 of the story, time machine is spelled timmshyn, then the next three times he spelled the word he indicated an awareness that the vowel in time was a glide and that there was a schwa at the beginning of machine. He spelled each as tiymmashyn. He verified his phonological awareness with fliying for flying and mytyting for meat eating consistently using the iy for the long i/ay sound and the y for the long e/iy/ sound.

Children's spelling development is receiving deserved attention by researchers (13, 14, 15). They've shown that children may spell correctly at an early period but as they develop they look as if they are regressing. Our own evidence suggests that these "misspellings" are over-generalizations that occur. Early in development children may copy or have adults spell for them and notes to friends may seem "right". As they develop, they begin to generate or invent their own spelling using developing intuitive rules. Bobby who at age four had written "Dear Grandmother, I love you" wrote her a note when he turned five which said "Der Gadmtr. I luvyu."

Our research also shows that graphic shape and length of word has impact on spelling development in addition to articulatory and phonological features. Kristy age 5 was asked by her mother to write milk. She carefully said each letter as she wrote: "em" (M), "aye" (I), "el" (L), "kay" (K). When she was through, her finished production looked like this: MLK. Kristy stared at her production for some time

and then added an M at the end (MIKM). Later after continuous inspection of MIKM, she crossed out the M. When asked why she had done this, she replied, "I thought it needed something else but milk has a K at the end. Only these letters are milk." She pointed to the MIK.

Because of the way reading and writing are used in our society, writing probably develops more slowly and later than reading. However, in homes where children's writing is encouraged for purposes of communication, writing could develop simulatenously and become more sophisticated at an earlier age than reading. Before I discuss the last two roots, it is necessary to examine the different nature of these compared to the first three. The last two roots are developed in relation to the first three. They represent oral language use and thought processes as influenced by the use of written language that children are developing. These will develop in direct response to the social settings, the varied functions and the linguistic features of the first three roots. Talking and thinking about written language only takes place when children are actively involved in using written language as we explored in the first three roots. Therefore there is no separate social setting, function or language features to describe for these last two roots. They are developing at the same time as the first three roots are developing and they develop because the first three roots are developing. If the child did not interact with print in an environmental setting, there would be no need for talking about or thinking about signs or labels or other written language in the environment. If the child was not being read to or seeing writing in his or her home, there would be no purpose or need to talk about, think about, or develop schema about

written language. These last two roots are interrelated with the development of all aspects of the first three roots and we need to consider them separately.

Root IV is the Use of Oral Language to Talk About Written Language and Root V is Metacognitive and Metalinguistic Awareness About Written Language. At the present time, I believe that Root IV probably occurs somewhat prior to the development of Root V and is always more developed or more sophisticated than Root V. Even as adults, we are able to talk about reading and writing, about what we do with them, how we use them, and how important they are. On the other hand, even scholars who have studied how children learn to read and write or how the process of reading and writing develops are not able to fully articulate the processes humans use as they read and write. Root IV is the use of the language relating to written language including its vocabulary such as read, write, name, word, page, book, number, Spanish, Arabic, letter, etc. It also includes the use of phrases such as "What does this say?", "Turn the page", "Read this to me", "What's your name?", "I'll read you a book", "Don't forget to write", etc. This use of language for both children and adults is usually used in an appropriate context calling for a particular use of language.

Root V is concerned with overt evidence that there is understanding about how written language is used or processed. We will discuss each root separately.

Root IV. Use of Oral Language to Talk About Written Language

When adults say, "I'll write your name on your picture" or "Sign your name to grandma's card" or "What does this say?" pointing to the

child's pre-communicative writing, the picture, the pen and the child's productions are usually there to refer to and to use as cues to understanding. Even when the specific referent is not immediately available, there are pragmatic constraints in the social context which help the child (and the adult as well) to understand. Mother is on the phone and calls out, "Get me a pencil, I need to write down this message for Dad." Or it is bedtime and Daddy says to Tommy age 2½ as they are walking towards the bedroom after bath time, "Go get me your favorite book to read."

The young child can also respond appropriately in a commonplace situation. A three year old says when a page of a book has been read by the adult, "Turn the page". Or a two year old pulls her favorite aunt into a chair, pushes a book into her hands and says, "Read me, read me."

When these same children are placed in more clinical or research settings where they are asked for definitions using a question-answer format, the children often use language about written language but may use the language less appropriately. Three year olds readily say, "Turn the page" when the adult reading to them has come to the end of the page. However, they are not very adept at responding when the adult waves a page from a book back and forth and asks, "What is this?" Typical responses to the latter statement can be "paper", "moving", or "a boy" referring to the picture on the page being moved. It is not uncommon for a child to be able to spell his own name R O B E R T and yet respond inappropriately when asked by an adult what those letters are (pointing to the letters). The child may reply "Those are numbers" or "There are six words in my name." Still in this type of word

substitution, the child in most cases is using terms within an appropriate category, terms for graphic units.

In question-answer settings, children may substitute terms like words, number and letters for one another. However, in our research a word or letter or number has never been called a book or a page. It is not uncommon for a two year old to over-generalize the term Daddy to refer to all men. But this does not mean that the child does not know his or her own daddy from other men. For such children, features of maleness and daddyness are overlapping. The same seems to hold true of our three to five year olds in talking about written language. It is important to keep in mind that the inappropriate use of a label does not necessarily mean that the child is confused about the concepts. In fact, what the child may be providing evidence for is the development of significant features about written language which do not yet match the adult's categories.

The development of oral language about written language is totally tied to the experiences children have with written language. The home and the pre-school environment are very important to help children develop the concepts and the labels related to them. In an environment rich with written language experiences which have very real purpose and function for the children, the concepts and oral language about written language develop over a period of time and the appropriate oral language forms begin to be used more and more. Given time, children work out for themselves what items belong in what categories.

In a society, as ours, where people are very concerned with literacy, there are many opportunities even outside of school settings

where children encounter oral language about written language which is isolated from its use. Pre-schools, television shows, materials developed for pre-schoolers which parents are encouraged to buy often provide children with the names of letters, sounds and the use of terms such as word, number, etc., which are similar to formalized instructional settings rather than related to the use of language in a functional way in a more natural language use setting. Children learn these kinds of things, too. What is important to understand, however, is that the naming of letters, numbers and words apart from the use of written language may be conceived by some children as a task unrelated to reading. Let me try to explain this through a common analogy. Children learn to use building blocks to build all kinds of structures. Sometimes the building blocks they use to build houses or stores or roadways can have letters on them. Children can also use the same blocks to call out the letters or to spell out their names or the names of their loved ones. However, to the child, the naming of the letters or spelling of their own name with the blocks certainly has nothing to do with using the blocks for constructing castles or airports.

Children can learn to sing the alphabet, read and write numbers, write letters and call them by name but never become aware that this activity is related to reading in books, writing letters to friends or writing their names on paper. One example is of Tanya age 4 who is looking at a red six-sided stop sign pasted on a cardboard. The researcher and Tanya have the following conversation:

Tanya: That says stop.

Researcher: What else can you tell me about this?

Tanya: X (points to S)

Researcher: How about that? (points to T)

Tanya: A "Y".

Researcher: And what about this one? (points to O)

Tanya: A "Z" and a "P".

Researcher: And altogether it says what?

Tanya: "X U Y Z O X P."

Researcher: Now what's that say?

Tanya: A sign that says stop.

Children can learn many things ritualistically and enjoy it because they like the rhythm or the sound and not relate it to anything they are beginning to understand conceptually about reading and writing.

Another example is provided by Quincy age 4 who looked at I V O R Y and said, "That says soap." When asked if he knew anything else about the logo in front of him, he first said, "I don't know." Then he said pointing to the I in Ivory, "If you put a dot on this, it's in my name; if you put a line down here that's in my name (points to the O)." Then pointing to the Y he said, "That's in my name too....that's a.....Q U I N C Y ... that's a Y." The researcher then asked, "Does this say your name?" "No," replied Quincy. "That says soap."

Children begin to read print embedded in environmental settings and even in connected discourse before they are aware of the relationships of the labels <u>letters</u> and <u>words</u> to reading and writing. I believe it is the use of reading and writing that helps children develop oral language about written language. To isolate one from the other or claim that labeling and overt conceptualizations must precede reading and

writing will, I believe, cause confusions which are difficult to sort out as children get older. Very often as teachers see this confusion develop, worry sets in about what a child will be expected to demonstrate on some standardized test. Just at a time when children should be focussed on understanding that written language is for the purpose of communication, they are focussed on memorizing names, words, letters and their attention is turned away from the significance of function, purpose, meaning and communication in written language.

It is not possible to list the way in which oral language use about written language will develop. The use will be directly tied with the development of the first three roots. Whatever occurs in Roots I - III will be talked about, considered, wondered about.

Through oral language interactions, people express all kinds of attitudes about written language in front of the child which also has impact on its development. While doing homework, older siblings will talk about what happens during reading and reading instruction in school. Adults talk about what they read, what they like to read, and what is good to read. People begin to lay the groundwork for the young child's attitudes toward poetry, learning to read, instruction in reading, the ability of family members to read and the difficulty of reading. For some, reading is taken for granted. Everyone does it and it is assumed that the young child will do it easily and well. For others, reading is a chore. It is something which must be done because it is probably good for people like castor oil or taking a bath once a week. All of these attitudes, reactions, and language reflected by the adults and older siblings or children in the environment

surrounding the child daily, leave their indelible mark on the language the child develops to use when he or she talks about written language.

Root V. Metacognitive and Metalinguistic Awareness About Written Language

This last root focuses not just on the use of language and the thinking and conceptualizations necessary for the use of language to occur but rather focuses on the ability to understand and explain the process of language itself. It presupposes the ability to analyze language in such a way that the user can define, explain, compare, contrast or categorize language units. I have narrowed the definition of metalinguistic to the use of language to explain language processing. In order to show metalinguistic awareness, there has to be some evidence of analysis of the process. This does not mean that the analysis has to be correct by adult standards but it must show evidence that the child is thinking about how language works. When three year old Roberta says, "Revco has the same face as my name," her use of terminology is not the same as that which an adult might use but it indicates an analysis of aspects of language.

Metalinguistic awareness starts early as Roberta's comment about Revco and her name shows. I believe that metalinguistic awareness develops like other concepts develop (16, 17). First as in the Revco-Roberta example, the analysis and the oral response is very personal. Children tend to build their initial concepts related to everyday personal experiences. I've provided a number of appropriate examples already but two more may be in order. Anders was three years old when he pointed to the A in Safeway on a grocery bag and said, "That's one

of mine." His mother responded, "One of yours?" Anders said, "Yes, like in Anders." Patrick aged 4 who responded to the MILK on the carton and said, "That says MILK," then pointed to the K and said, "That's for Kelly...she's my lover girl, my lover girl!"

Then as the child develops, the statements providing analysis of language begin to be more similar to adult concepts. These concepts may be called public or commonsense conceptualizations. Again these concepts may not yet be scientifically accurate but they are similar to the concepts about language which most adults in the community would agree on. Children's public concepts about language begin with some children as early as five. Examples we have collected include one sample from Paula age 5 involved in a spelling task:

Researcher: Are you saying the word?

Paula: Yeah, so I won't forget what's at the end or in the middle or at the first.

Researcher: What are you doing now?

Paula: Well, I'm thinking what...the letter sounds like...so I can spell it right, you know.

Since children can only understand and develop conceptualization about those activities in which they are actively involved, development in written metalinguistic awareness can only occur as children are involved in reading and writing. Children who have never used written language are unable to think about and discuss how its processes work.

The significance of the last root to instructional practices needs to be carefully studied. There is a good deal of correlational research to indicate that those who read and write well can pass tests

which focus on language analysis. This has caused some to conclude that metalinguistic awareness is prerequisite to literacy instruction. Yet other conclusions are equally plausible. The ability to use language effectively may be prerequisite to being able to provide evidence about metalinguistic awareness or both development in metalinguistic awareness and use of language (Roots I - IV) may occur in concert and result from the same nutrients in the soil of growth. On the other hand, development may occur because of a dynamic interaction of all five roots of literacy. In addition, little research has looked at effective readers and writers who are not able to verbalize about written language. We must be careful about our conclusions because the instructional programs we plan will be very different depending on which conclusion we choose.

Schooling has significant impact on children's pre-school language development and it isn't always positive. Two examples will suffice. Jonathan was writing his name in all caps since he was three years old. By the time he was four, he was writing stories which anyone could read using invented spellings which represented his developing graphophonic rule system. One week after school began, he no longer would write anything but his name. His response to the question, "Why don't you write a story?" was I can't write til I'm in first grade." And he didn't.

Mia had a similar experience. She had been writing her name since she was 3½ with a capital M, a dotted i as large as the M and a capital A (miA). After three weeks in kindergarten, she came home with a worksheet and on the line that said Name was written only Mi. Her mother asked, "Mia, what happened to your a?" Mia responded, "I don't know how to make a's yet." Two days later Mia's worksheet only

had an M on the name line. The mother again asked why and Mia's response was, "I don't know how to make i's yet." Three days later, Mia didn't sign any parts of her name on her school work. It took a number of months before Mia would write her name in school although she continued to write at home. She was not as completely intimidated by school policies as Jonathan was.

I hope these incidents are rare. Whether they are or not, the significant implications of these examples is that instructional practices are singularly important to help extend literacy development or to stop its growth in serious and dramatic ways.

Conclusions

Those of us responsible for literacy development in school can only be successful if we understand and appreciate the multiplicity of forces which influence how children learn to read and write. We must be aware of the social, cultural and economic forces which influence the development of literacy. We must understand the impact the complex attitudes and views various members of society have toward literacy. We must understand the child's own involvement in, and control of, learning to become literate. We must understand the teacher's impact on the child's learning both through instructional techniques, which enhance learning to read, and those which interfere.

Development of curriculum for literacy must take into account what all children already know. We must stop preparing children to read but rather expand on their immersion in all kinds of reading and writing activities. Curriculum needs to be organized in ways that provide the greatest opportunities for children to build on their developing literacy

roots in order to grow a vital and strong tree of literacy.

My research has shown that literacy develops naturally in all children in our highly literate society. I'm certainly not the first person to recognize natural literacy development but maybe we are more ready now to understand its significance. Edmund Huey concluded his study of reading in 1908 with the following pedogogical statement:

> "The home is the natural place for learning to read, in connection with the child's introduction to literature through story-telling, picture-reading, etc. The child will make much use of reading and writing in his plays, using both pictures and words" (18).

I can only hope that 72 years from now it isn't necessary for someone to quote me to prove their point about natural literacy development.

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